RIVERSIDE

June 21, 2016

Federal Communications Commission
Ms. Marlene Dortch, Secretary
445 12th Street, S.W.
Washington, DC 20554

RE: Letter in response to RM-11681 Petition for Rulemaking: Ligado's Request to Allocate the 1675-1680 MHz band for Terrestrial Mobile Use Shared With Federal Use

Dear Ms. Dortch:

The National Oceanic and Atmospheric Administration's (NOAA) mission is science, service, and stewardship. They accomplish this through the systematic study of the structure and behavior of the ocean, atmosphere, and related ecosystems. For 25 years, Riverside Technology, inc. has continuously supported NOAA with the environmental intelligence to make critical decisions about life and property. Our experience with NOAA spans such diverse areas as satellite data analysis; ocean and coastal management and conservation; climate data collection, analysis, and assessment; watershed modeling; water resource planning; and policy, operations, management, and development.

The majority of Riverside's work in earth observation and satellite systems comes from projects with NOAA's National Environmental Satellite, Data, and Information Service (NESDIS) office. This organization is dedicated to providing timely access to global environmental data from satellites and other sources to promote, protect, and enhance the nation's economy, security, environment, and quality of life. Riverside, through more than a decade working for multiple NESDIS offices under a variety of federal contracts, supports the NESDIS mission to acquire and operate environmental satellites; operate NOAA National Data Centers, provide data and information services, including earth system monitoring; perform official environmental assessments; and conduct related research.

Riverside provides technical support and system engineering services for the GOES-R program, which represents the next generation of environmental satellites critical for weather forecasting, climate research, and natural hazards detection and monitoring. Riverside provided geostationary environmental satellite support and services spanning nearly the full range of GOES-R program planning and execution, including:

- Requirements tracking and management
- Science algorithms and products generation
- Environmental information products development
- Instrument calibration
- All GOES-R programmatic and technical reviews including Preliminary Design Reviews (PDR) and Critical Design Reviews (CDR)
- Executive level management reviews

Based on our 25 years of work within NOAA, we are keenly aware of the value of the direct broadcasts from GOES, and many of our projects rely on the direct broadcasts from GOES-R series satellites in the 1675-1695 MHz radio spectrum. We know that timely and reliable reception of data from NOAA's geostationary satellites is crucial to getting this taxpayer-funded technology to work as it needs to for the public.

Riverside is in the unique position of not only being impacted via the earth observations and satellites realm, but also in our work with National Weather Service (NWS) and others in hydrology. Riverside has supported the NWS for more than two decades through the development and implementation of hydrometeorological networks, decision support systems, calibration of NWS forecast models, hydraulic modeling, and precipitation design studies

Our particular industry of weather and climate data support is on the verge of launching a new generation of GOES satellites. GOES-R series satellites are a giant leap forward in technology, as we have seen firsthand through examples of the dramatically finer scale products GOES-R data enables for everything from fog which impacts transportation safety, to precipitation estimates which impact flood and flash flood warnings, to enhanced knowledge of mid- and upper-level winds used to estimate the intensity and track of hurricanes. These satellites will offer more and different types of data products that will be more accurate and of higher resolution than the current system. GOES-R data will be available faster than the current satellite because of the direct broadcast downlink and the environmental/hydrological data relay in 1675-1695 MHz band.

Riverside is one of many private sector companies providing services and value-added meteorological and hydrological data products which rely critically on the unfailing reliability of these data. We believe radio frequency interference can be generated from strong terrestrial downlinks which share the same spectrum as the relatively weak signals from GOES in space. This interference would have a devastating impact on all who trust their safety and economic well-being on real-time weather forecasts in the U.S. and across the western hemisphere.

Early warnings of imminent destruction due to weather can protect lives and property and must be issued as rapidly as possible. This direct downlink information must be available to NOAA users under all conditions and situations. We know that cellular networks and internet capabilities are often taxed to their maxi during severe weather and natural disasters, but the GOES/GOES-R direct broadcasts have very little infrastructure subject to failure during stressing conditions. Interference with the ability for GOES/GOES-R satellites to operate at their optimum capacity would endanger the reliability and the effectiveness of public safety meteorological and hydrological data flow. We support the transmission of weather warnings via smartphones and tablet computers, but it is critical to note that Federal data received from NOAA satellites relying on technology and services developed by Riverside contributes substantially to the content made available on wireless broadband devices in the first place.

This transition to GOES-R will be a generational change in meteorology and hydrology, and Riverside feels strongly that this proposed sharing arrangement would handicap the fastest and most reliable means of disseminating this new satellite capability before the $8.5-million-dollar satellite series is even brought into use. The satellites[1] are already designed, and the first and second ones are either built or under construction, using the 1675-1695 MHz spectrum in their transmitters.

The interference caused by the sharing of the 1675-1680 megahertz band will significantly threaten the distribution of crucial weather/hydrological information from the technology facilitated by Riverside in partnership with NOAA, which the nation relies on to respond immediately with the highest quality information to dangerous weather like tornados, hurricanes, and wildfires.

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[1] GOES-R and GOES-S satellites under construction showing L-band transmit antennas http://farm2.staticflickr.com/1493/23884245579_32ac3a2311_b.jpg

Riverside Technology, inc. recommends that this spectrum not be shared with commercial interests. Thank you for the opportunity to share our views in this matter.

Sincerely,

Larry E. Brazil
President and CEO

CC:
Senator Michael F. Bennet, Colorado. Member of the Senate committees on Finance; Health, Education, Labor and Pensions; and Agriculture, Nutrition, and Forestry

Senator Cory Gardner, Colorado. Member of the Senate Energy & Natural Resource Committee.

Congressman Jared Polis, 2nd District of Colorado, Member of Committee on Rules, the Committee on Education and the Workforce, and the Committee on Natural Resources

The Honorable Lawrence E. Strickling, Assistant Secretary for Communications and Information and NTIA Administrator, Department of Commerce

The Honorable Dr. Kathryn D. Sullivan, Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator